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REMARKS

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I.   **Introduction**

   In response to the Office Action dated July 26, 2007, Applicants have amended claim 2

to correct inadvertent errors in the claim. No new matter has been added.

   For the reasons set forth below, Applicants respectfully submit that all pending claims are

patentable over the cited prior art references.

II.   **The Rejection Of Claims 1, 2, 4, 6, 10 and 12 Under 35 U.S.C. § 102**

   Claims 1, 2, 4, 6, 10 and 12 were rejected under 35 U.S.C. § 102(b) as being anticipated

by Kessler (USP No. 4,406,590). Applicant respectfully submits that Kessler fails to anticipate

the pending claims for at least the following reasons.

   With regard to the present invention, claim 1 recites, in-part, a hermetic compressor

comprising...a compression element driven by the electric motor element; the compression

element comprising: a shaft having an eccentric shaft body and a main shaft body; a piston

moving reciprocally in the compression chamber; a balance weight formed on the shaft, wherein

the balance weight is formed in such a shape that the distance between the outer circumference

of the balance weight and the piston is substantially constant in the closely approaching interval

of the balance weight and piston.

   Thus, one feature of the present invention is that as the balance weight rotates on the

eccentric axis, the distance from the outer edge of the balance weight and the piston will be

substantially the same, due to the shape of the balance weight. For example, in Fig. 3 of the

drawings, the distance from the outer edge of the balance weight 122 and the piston 120 will be

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substantially the same as the balance weight rotates. As a result of this feature, the vibration due to the use of the motor will be reduced. In addition, the weight of the balance weight can be increased.

It is alleged that Kessler teaches a balance weight 234 formed in such a shape that the distance between the outer circumference of the balance weight and the piston 84 is substantially constant in the closely approaching interval of the balance weight and the piston as shown in Fig. 11. No evidence has been provided to suggest that this allegation is true. The Examiner merely states that it is true.

However, this allegation is unfounded. As can be seen in both Figs. 1 and 11, the balance weight 234 of Kessler has a shape that produces an arc forming a complete circle if rotated upon its axis. However, the balance weight is not rotated upon its axis, but on axis of the eccentric shaft which is offset from the main axis. The present disclosure describes a similarly shaped balance weight 22 which is designed in a nearly arc profile (see Fig. 5 of the drawings). As is mentioned in on page 2, line 21- page 3, line 2, due to this shape, balance weight 22 does not have sufficient inertial force. That is, reciprocal inertial force of piston 20 cannot be canceled sufficiently, and vibration of the hermetic compressor is increased.

In contrast, the outer circumferential shape of the balance weight in the present disclosure has a shape with a smaller curvature than an arc of a complete circle. As can be seen in Fig. 3, the balance weight 122 has a shape in which the center-to-edge width increases along the edge traveling from the center to the far edge of the weight. This curvature is such that the distance between the outer circumference of the balance weight and the piston is substantially constant in the closely approaching interval of the balance weight and piston, whereas the balance weight of

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Kessler, the arc of which forms a complete circle, does not have this characteristic. This can be shown by use of the formula in claim 2.

Upon using the formula in claim 2 to describe the shape of the outer circumference of the balance weight, one skilled in the art can readily see that if the equation $[s \cdot \cos (360° - \theta) + L \cdot \cos \{\sin^{-1} (s \cdot \sin (360° - \theta) / L)\} + C - \alpha]$ is a constant, then the outer circumferential shape of the balance weight will form an arc of a complete circle when the angle θ is changed.

However, this equation is not a constant. As is shown in Fig. 3 and 4, the axial center of the eccentric shaft body, which the balance weight is mounted on, is not the same as the axial center of the main shaft body. "s" is defined as the eccentric amount of shaft 110 (distance between axial center 111a of main shaft body 111 and axial center 112a of eccentric shaft body 112). Thus as θ (the rotation angle of the eccentric shaft body 112) changes, the equation changes as well. As such, a balance weight having an arc of a complete circle does not fit this equation, because when $s = 0$, the equation is a constant. As such, the balance weight will not have a shape that is substantially constant in the closely approaching interval of the balance weight and piston.

Furthermore, Kessler is completely silent with regard to designing the shape of the outer circumference of the balance weight to prevent or significantly reduce vibration. Accordingly, Kessler does not disclose a balance weight formed in such a shape that the distance between the outer circumference of the balance weight and the piston is substantially constant in the closely approaching interval of the balance weight and the piston.

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Anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently in a prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), and Kessler docs not disclose that the balance weight is formed in such a shape that the distance between the outer circumference of the balance weight and the piston is substantially constant in the closely approaching interval of the balance weight and piston. Therefore, as it is apparent from the foregoing that Kessler fails to anticipate claim 1 or any dependent claims thereon, the Applicant respectfully requests that the § 102 rejection be traversed.

**III.   All Dependent Claims Are Allowable Because The
         Independent Claim From Which They Depend Is Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

IV.   Conclusion

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

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